Panel Discussion: Evolving DoD Security Requirements for Cloud

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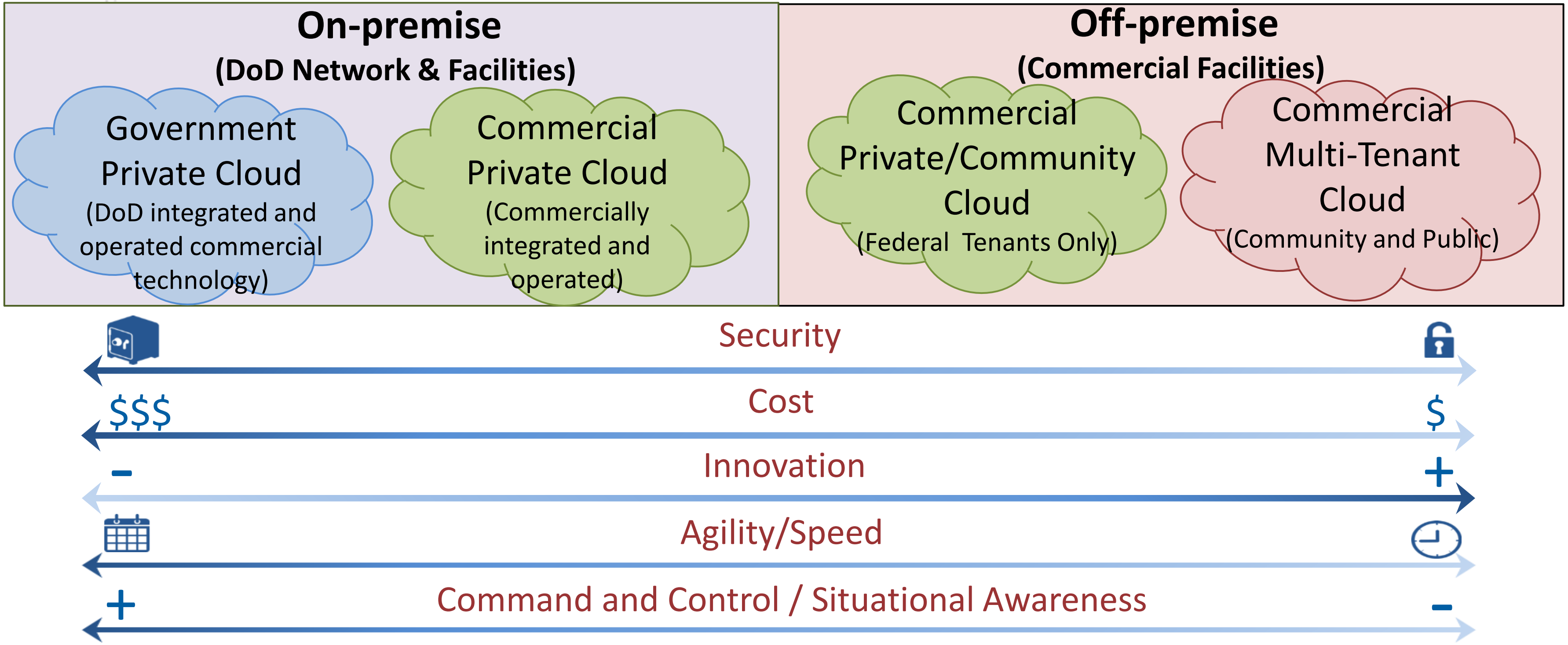
Balancing Security and Risk



On-premise
(DoD Network & Facilities)

Government Private Cloud
(DoD integrated and operated commercial technology)

Commercial Private Cloud
(Commercially integrated and operated)

Off-premise
(Commercial Facilities)

Commercial Private/Community Cloud
(Federal Tenants Only)

Commercial Multi-Tenant Cloud
(Community and Public)

Goal: Improve leveraging of commercial capabilities and efficiencies while enabling effective risk management

DEFENSE INFORMATION SYSTEMS AGENCY

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Cloud Security Controls

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29 January 2015

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Information Impact Levels

- Information Impact Level - The combination of:
  1) The sensitivity of the information to be stored and/or processed in the cloud; and
  2) The potential impact of an event that results in the loss of confidentiality, integrity or availability of that information

- Cloud Computing SRG defines 4 Information Impact Levels
  - Cloud Security Model (CSM) defined 6 Information Impact Levels
  - Simplifies Impact Level selection and CSP capability matching
  - Levels 1 and 3 have been rolled up with the next higher level
  - Levels designated as Level 2, 4, 5, 6 for consistency with the old CSM

Security and Privacy Controls

- **FedRAMP v2 controls serve as minimum baseline for any authorization**
- **DoD FedRAMP+ controls based on a CNSSI 1253 categorization of M-M-x:**
  - **Moderate Confidentiality (M), Moderate Integrity (M), Availability (x)**
    - Availability addressed in the contract/SLA based on mission owner requirements
  - **CNSSI 1253 (2014) M-M-x Baseline**
    - NIST SP 800-53 rev4 Moderate Baseline PLUS CNSS tailored C/CEs
  - **FedRAMP v2, Moderate Baseline**
    - NIST SP 800-53 rev4 Moderate Baseline PLUS FedRAMP tailored C/CEs
  - **CNSSI 1253 & FedRAMP baselines compared to derive DoD's FedRAMP+ C/CEs**
- **Supplemental Control Requirements**
  - **CNSSI 1253 Privacy Overlay (when published) is invoked if PII/PHI is involved**
    - NIST SP 800-53 rev4 Privacy controls plus supplemental control guidance
  - **CNSSI 1253 Classified Overlay is invoked at Level 6**

Key Security Requirements

IMPACT LEVEL	INFORMATION SENSITIVITY	SECURITY CONTROLS	LOCATION	OFF-PREMISES CONNECTIVITY	SEPARATION	PERSONNEL REQUIREMENTS
2	PUBLIC or Non-critical Mission Information	FedRAMP v2 Moderate	US / US outlying areas or DoD on-premises or AO authorized locations	Internet	Virtual / Logical PUBLIC COMMUNITY	National Agency Check and Inquiries (NACI)
4	CUI or Non-CUI Critical Mission Information Non-National Security Systems	Level 2 + CUI-Specific Tailored Set	US / US outlying areas or DoD on-premises or AO authorized locations	NIPRNet via CAP	Virtual / Logical PUBLIC COMMUNITY Strong Virtual Separation Between Tenant Systems & Information	ADP-1 Single Scope Background Investigation (SSBI) ADP-2 National Agency Check with Law and Credit (NACLC) Non-Disclosure Agreement (NDA)
5	Higher Sensitivity CUI National Security Systems	Level 4 + NSS & CUI-Specific Tailored Set	US / US outlying areas or DoD on-premises	NIPRNet via CAP	Virtual / Logical FEDERAL GOV. COMMUNITY Dedicated Infrastructure	
6	Classified SECRET National Security Systems	Level 5 + Classified Overlay	US / US outlying areas or DoD on-premises CLEARED / CLASSIFIED FACILITIES	SIPRNET via CAP	Virtual / Logical FEDERAL GOV. COMMUNITY Dedicated Infrastructure	Favorably Adjudicated SSBI SECRET Clearance NDA

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Cloud Computer Network Defense (CND)

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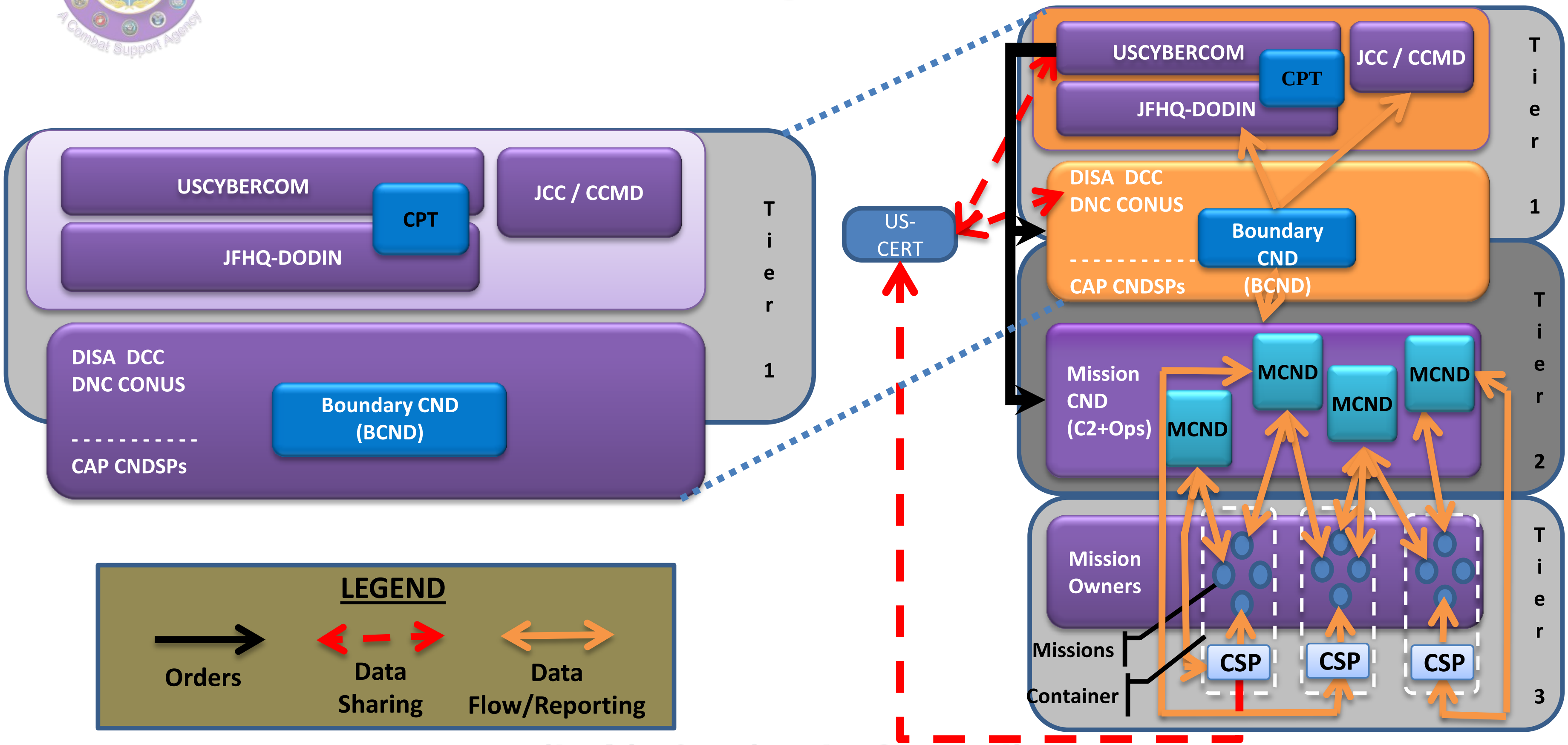
Boundary CND Providers



USCYBERCOM

CPT

JFHQ-DODIN

JCC / CCMD

Tier 1

DISA DCC
DNC CONUS

Boundary CND (BCND)

CAP CNDSPs

US-CERT

USCYBERCOM

CPT

JFHQ-DODIN

JCC / CCMD

Tier 1

DISA DCC
DNC CONUS

Boundary CND (BCND)

CAP CNDSPs

Mission CND (C2+Ops)

MCND

MCND

MCND

MCND

Tier 2

Mission Owners

Missions

Container

CSP

CSP

CSP

Tier 3

LEGEND

Orders

Data Sharing

Data Flow/Reporting

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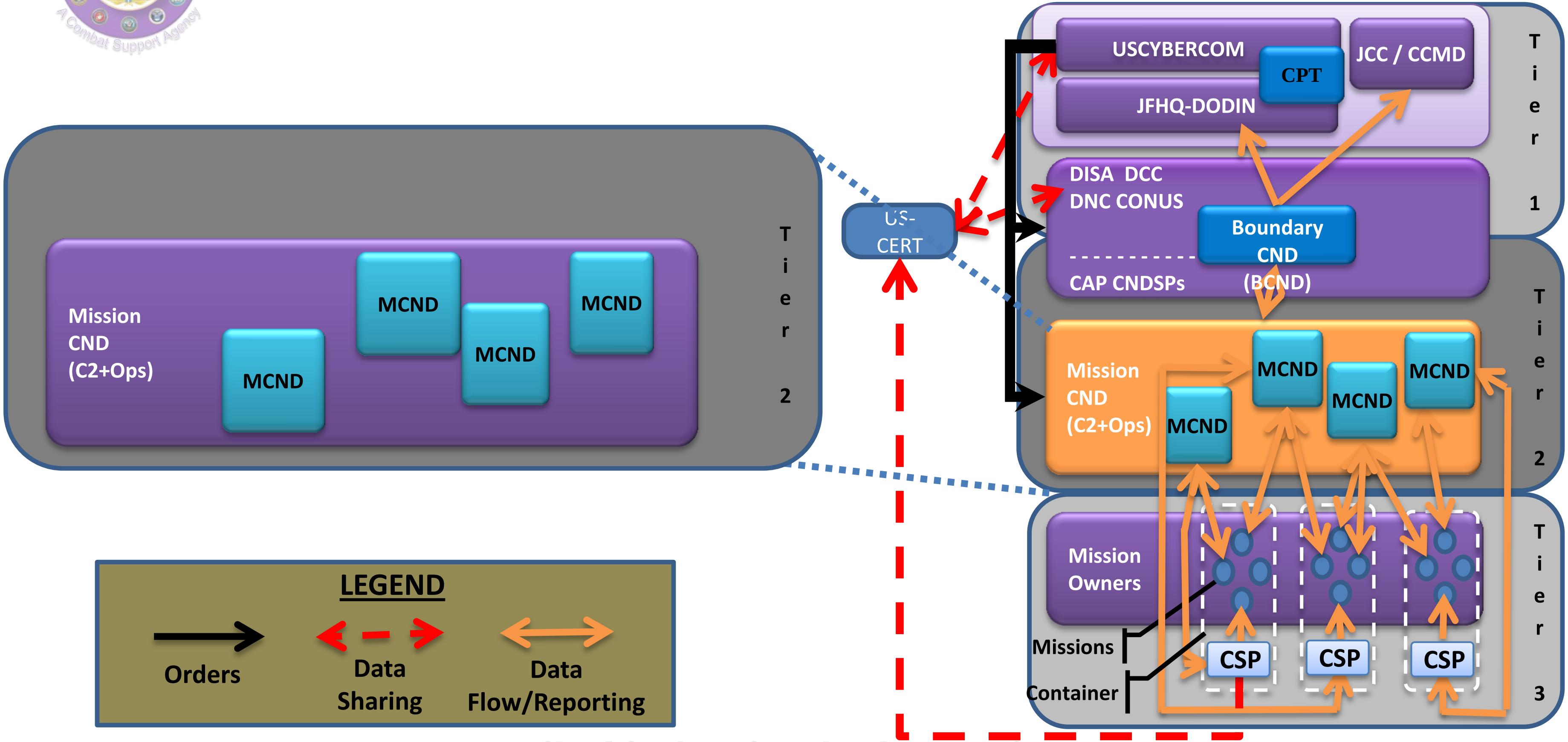
Mission CND Providers



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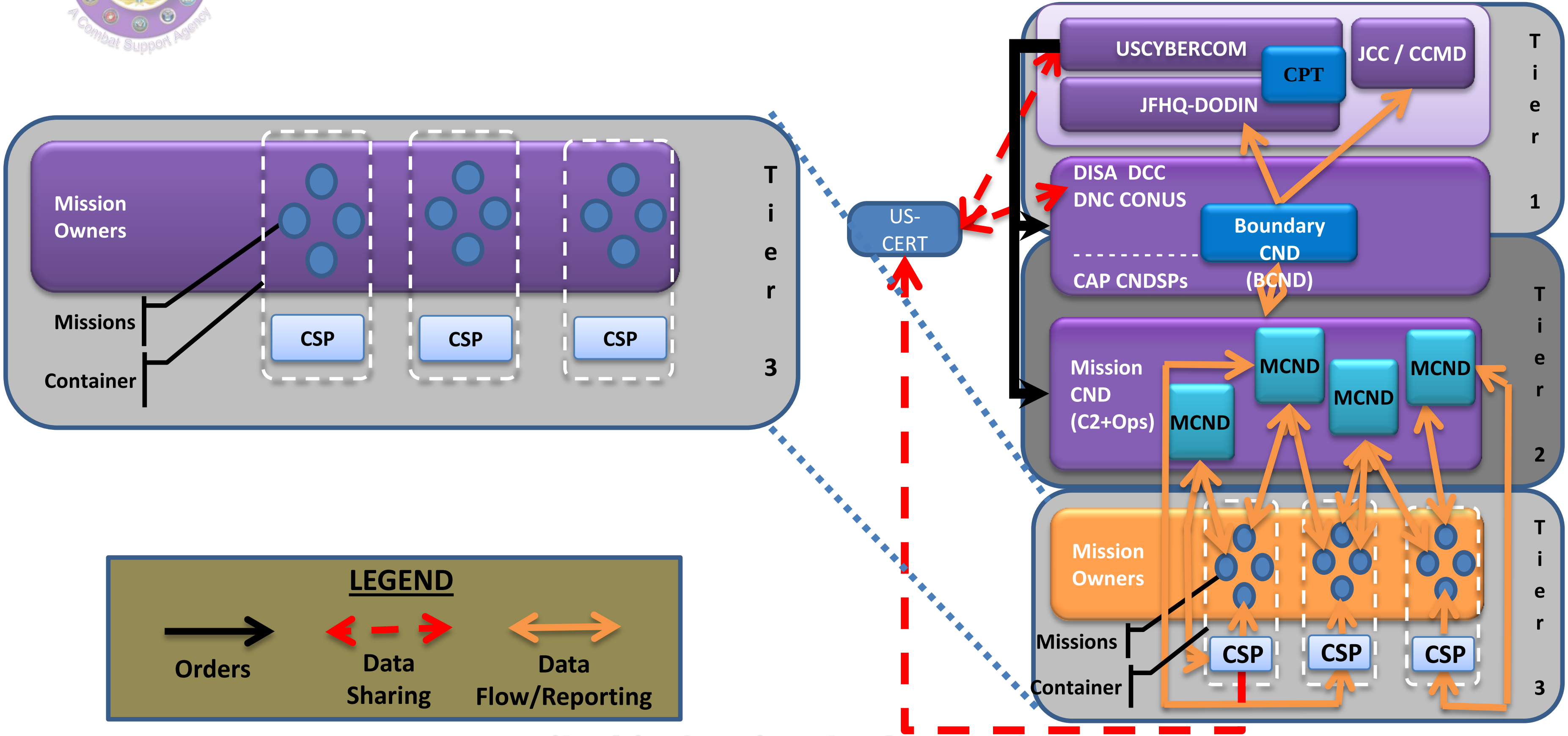
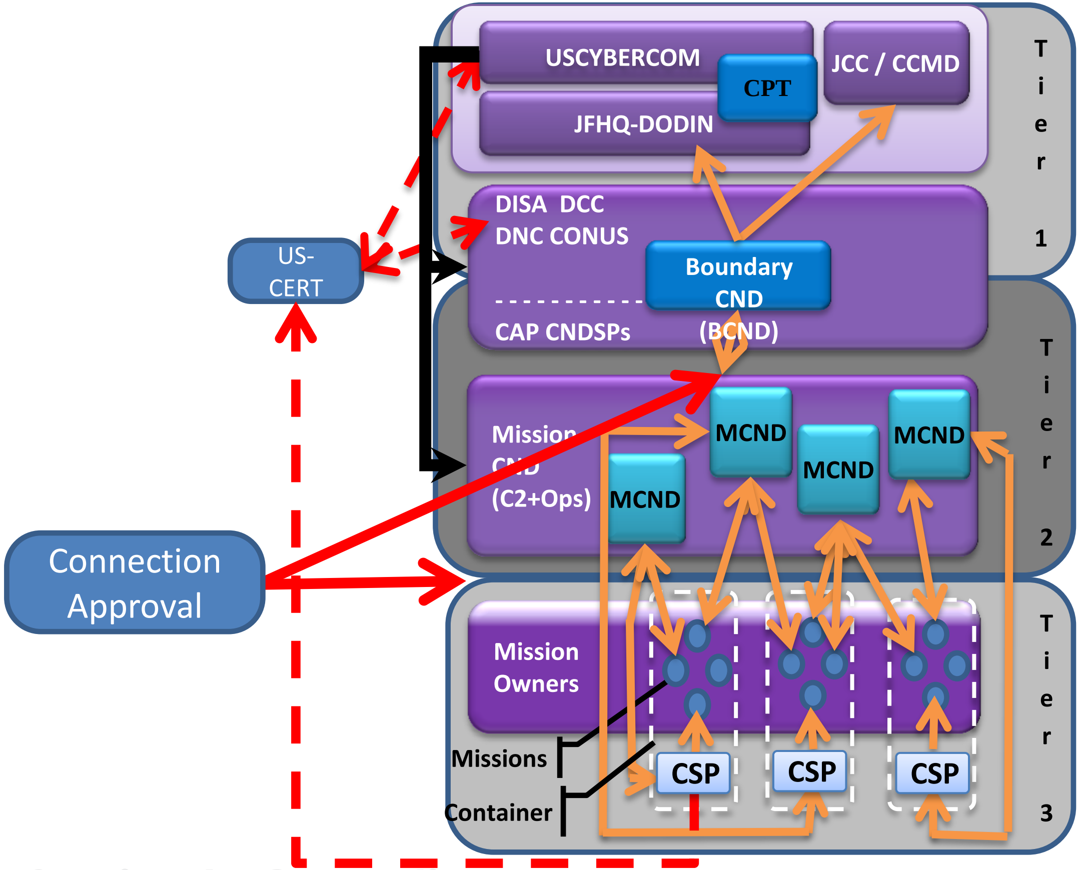
Mission Owners / CSPs



Connection Management

DISN Connection Approval Office

- Maintains the Connection Process Guide (CPG) to establish secure, dedicated connection to Cloud Service Offering
- Assures DoD Cloud Access Point (CAP) CND is established as part of issuing Authority to Connect
- Assures Impact Level considerations appropriate to the connection type
- Maintains a registry of all cloud operations for CND purposes



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Cloud Access Point (CAP)

Peter T. Dinsmore

Risk Technology Executive (RE)

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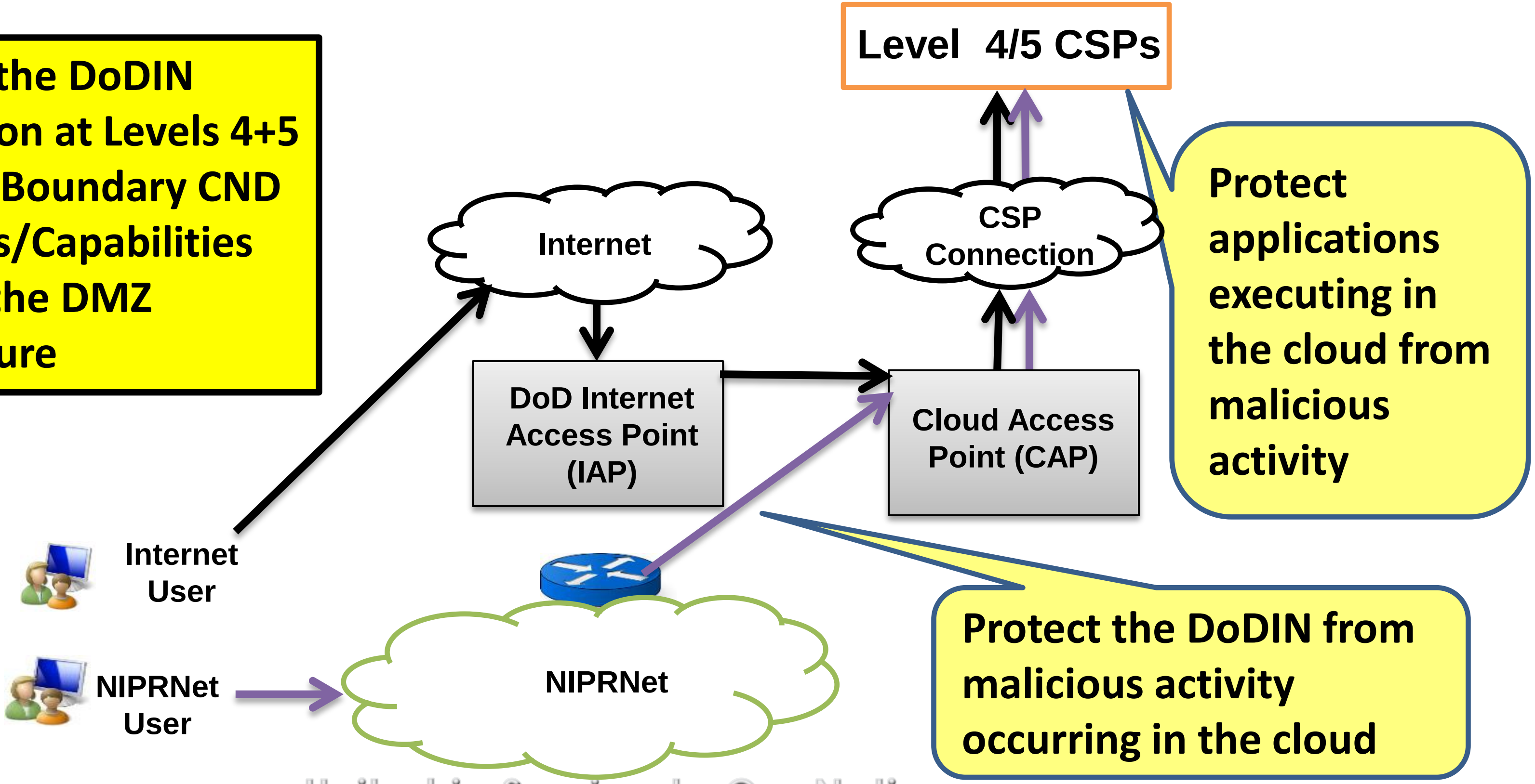
Impact Level 4/5 Architecture

- Protects the DoDIN
- Connection at Levels 4+5
- Provides Boundary CND Functions/Capabilities
- Extends the DMZ architecture



Protect applications executing in the cloud from malicious activity

Protect the DoDIN from malicious activity occurring in the cloud

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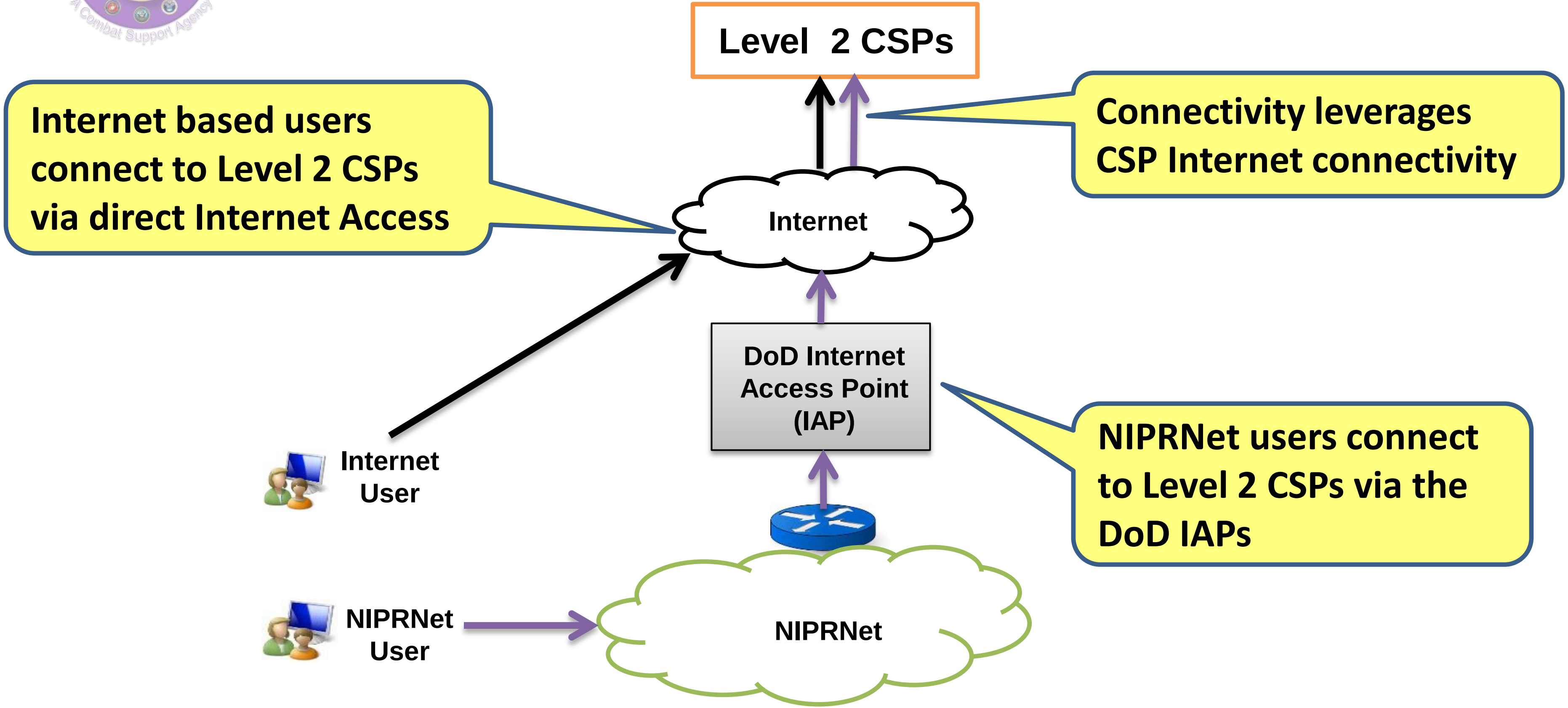
Impact Level 2 Architecture



Level 2 CSPs

Internet based users connect to Level 2 CSPs via direct Internet Access

Connectivity leverages CSP Internet connectivity

Internet

DoD Internet Access Point (IAP)

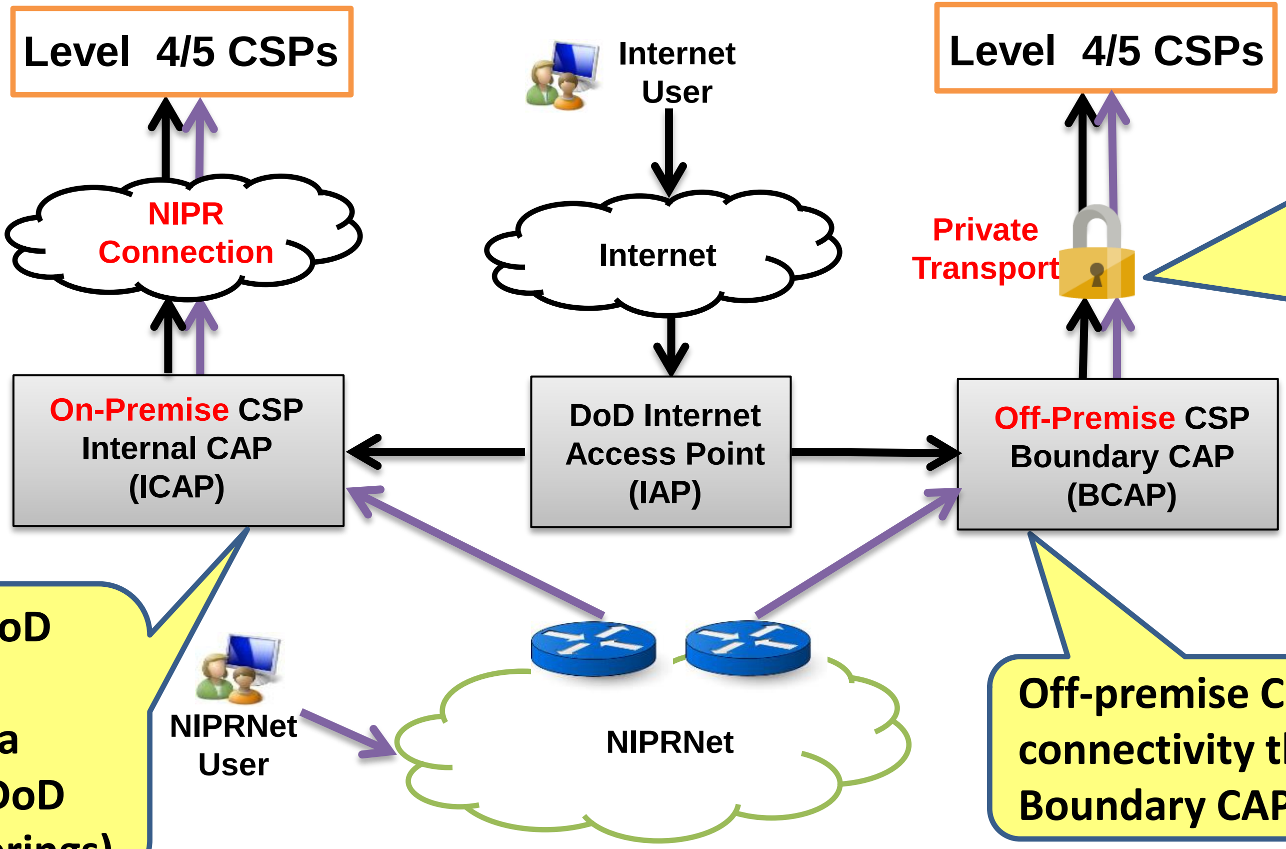
NIPRNet users connect to Level 2 CSPs via the DoD IAPs

Internet User

NIPRNet User

NIPRNet

On-premise vs. Off-premise


Level 4/5 CSPs
NIPR Connection
On-Premise CSP Internal CAP (ICAP)
Internet User
Internet
DoD Internet Access Point (IAP)
Level 4/5 CSPs
Private Transport
Off-Premise CSP Boundary CAP (BCAP)
NIPRNet User
NIPRNet

Meet Me' Points (MMP) will support multiple CSPs

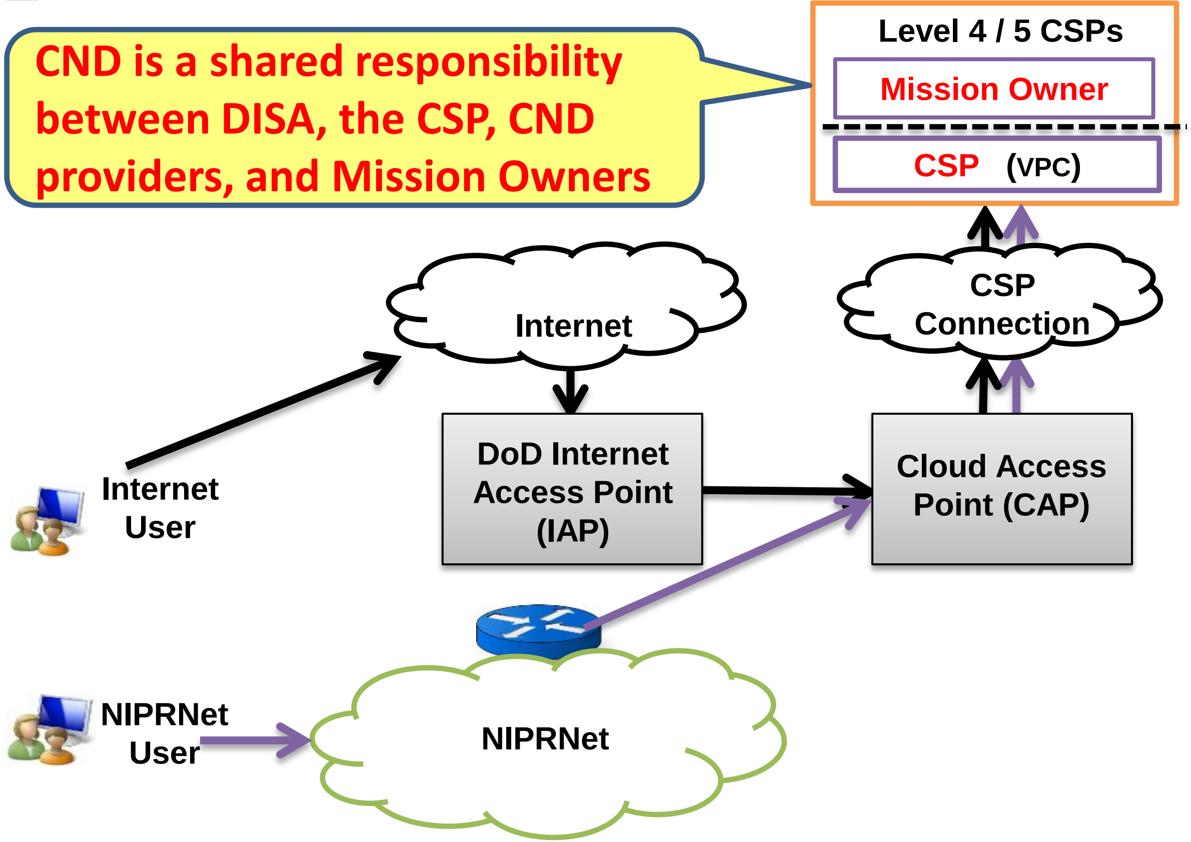
On-premise (DoD B/P/C/S) CSP connectivity via Internal CAP (DoD Dedicated Offerings)

Off-premise CSP connectivity through Boundary CAP

Infrastructure vs. Mission

ELEMENTS OF CND

- Intrusion Detection/Prevention System (IDPS)
- Firewall Capabilities
- Enterprise Information Assurance
- Enclave Security
- Application Protection
- Logging and Analysis



CND is a shared responsibility between DISA, the CSP, CND providers, and Mission Owners

Level 4 / 5 CSPs

Mission Owner

CSP (VPC)

CSP Connection

Internet

DoD Internet Access Point (IAP)

Cloud Access Point (CAP)

Internet User

NIPRNet User

NIPRNet

CAP Process and Procedures

- Connection of a mission system to the DoDIN via an ICAP or BCAP will be approved and recorded by the DISA Connection Approval Office in accordance with normal connection approval procedures
- Initial connections (physical or virtual) to a CSP's network will occur during onboarding of the CSP's first Mission Owner customer.
- Additional connections will be made or capacity will be scaled as more Mission Owners use the given CSP.

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